A new species of Laughingthrush (Passeriformes: Garrulacinae) from the Central Highlands of Vietnam

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Mount Kon Ka Kinh (14°19'N, 108°24'E) at 1,748 m is the highest point in Gia Lai province and one of the highest mountains in the Central Highlands (Central Highlands is synonomous with Western Highlands, which is a literal translation of the Vietnamese *Tay nguyen*). Central Highlands is itself a misnomer, since the area is composed of two isolated massifs between which lies an inclined plateau, which forms part of the Mekong basin. To the north lies the Kon Tum plateau which extends across *c.* 10,000 km^2 in Kon Tum and Gia Lai provinces, and includes Mount Ngoc Linh, which at 2,598 m is the second highest mountain in Vietnam. To the south lies the Da Lat plateau, which extends across approximately 6,000 km^2, the highest point of which is the outlying Mount Chu Yang Sin (2,244 m). Mount Kon Ka Kinh is located in Kon Ka Kinh Nature Reserve, in the southern part of the Kon Tum plateau and lies 95 km from Mount Ngoc Linh, which is located within the two adjoining sectors of Ngoc Linh Nature Reserve (Figs. 1 and 2).

From the geographical isolation of the mountain, its height and the lack of earlier ornithological exploration, we expected to make interesting findings on Mount Kon Ka Kinh. It was therefore selected for survey as part of an ongoing project between BirdLife International and the Forest Inventory and Planning Institute (FIPI) which aims to ensure that all internationally important areas for biodiversity conservation are included within the revised system of protected areas of Vietnam (Wege *et al.* 1999).

Along the summit ridge of Mount Kon Ka Kinh on 1 April 1999, JCE mist-netted and collected an unfamiliar laughingthrush *Garrulax* sp. Subsequently JCE collected a fledged juvenile on 23 April and mist-netted another adult on 29 April from different sites at the same locality. Examination of holotypes of four races of *Garrulax rufogularis* (*G. r. assamensis*, *G. r. intensior*, *G. r. occidentalis* and *G. r. rufiberbis*) in the American Museum of Natural History, New York, and comparison with skins of six races of *G. rufogularis* (*G. r. rufogularis*, *G. r. assamensis*, *G. r. intensior*, *G. r. occidentalis*, *G. r. rufiberbis* and *G. r. rufitinctus*), *G. cineraceus* and *G. lunulatus* at The Natural History Museum, Tring, U.K., showed that this bird represents a new distinctive taxon of *Garrulax*, which we name:

Chestnut-eared Laughingthrush *Garrulax konkakinhensis*, sp. nov.

Holotype. Deposited at the Natural History Museum, Tring (BMNH No. 1999.31.1), adult male (gonad condition not noted) collected on Mount Kon Ka Kinh

(14°19'N,108°24'E), Gia Lai province, Vietnam, at *c.* 1,700 m asl. on 1 April 1999 (Plate 1; Figs. 3a-d).

Diagnosis. *Garrulax konkakinhensis* has four unique plumage features that are not shown by any race of *G. rufogularis*. In *G. konkakinhensis*, all the rectrices are tipped white (Fig. 3a); the remiges are bluish grey and lack a black band across them (Fig. 3b); the fore-crown is grey streaked with black and a grey supercilium extends above and behind the eye (Fig. 3c); and the vent is rich buff and extends onto the belly (Fig. 3a). *Garrulax konkakinhensis* additionally shows an extreme degree of chestnut on the ear-coverts (Fig. 3c), an off-white throat, and extensive black tips to the tertials and scapulars. These features are not shown to the same extent, are shown irregularly, or are not shown in similar combination, by *G. rufogularis*. *Garrulax konkakinhensis* most closely resembles *G. rufogularis occidentalis* and *G. r. rufitinctus* in its general plumage pattern but differs from these two taxa in reduced levels of rufous in the plumage. All three taxa share, to a varying extent, chestnut ear-coverts, black on the crown, and the colour of the mantle, wing-coverts and breast. Additionally, *G. konkakinhensis* shares three plumage features with *G. cineraceus* and *G. lunulatus*: white tips to the rectrices, the absence of a black band across the remiges, and the vent and belly are buff.

Figure 1. Location of Kon Ka Kinh Nature Reserve

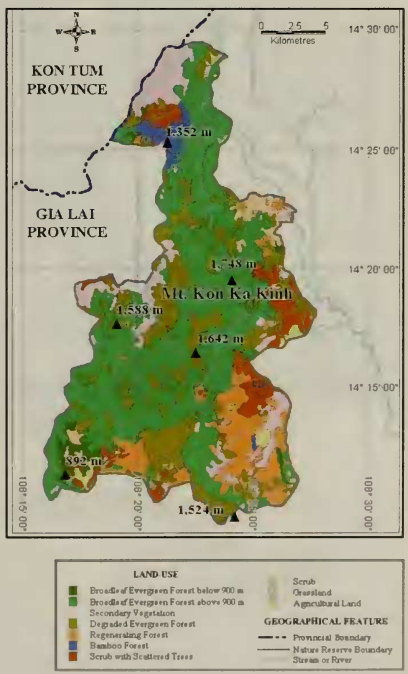

Figure 2. Land-use in Kon Ka Kinh Nature Reserve

Plate 1. Holotype adult male Chestnut-eared Laughingthrush *Garrulax konkakinhensis* (lower) and Rufous-chinned Laughingthrush *Garrulax rufogularis intensior* (upper). Original watercolour painting by Charles Eames.

Figure 3a

Figure 3b

Figure 3c

Figure 3d

Figure 3a. Ventral view of the holotype of Chestnut-eared Laughingthrush *Garrulax konkakinhensis* adult male, trapped and photographed on the summit ridge of Mount Kon Ka Kinh, Gia Lai province, Vietnam, on 1 April 1999. Figure 3b. Profile of the holotype. Figure 3c. Head detail of the holotype. Photographs by J. C. Eames. Figure 3d. Profiles of the holotype (middle) and two paratypes (juvenile top and female bottom) of Chestnut-eared Laughingthrush *Garrulax konkakinhensis*

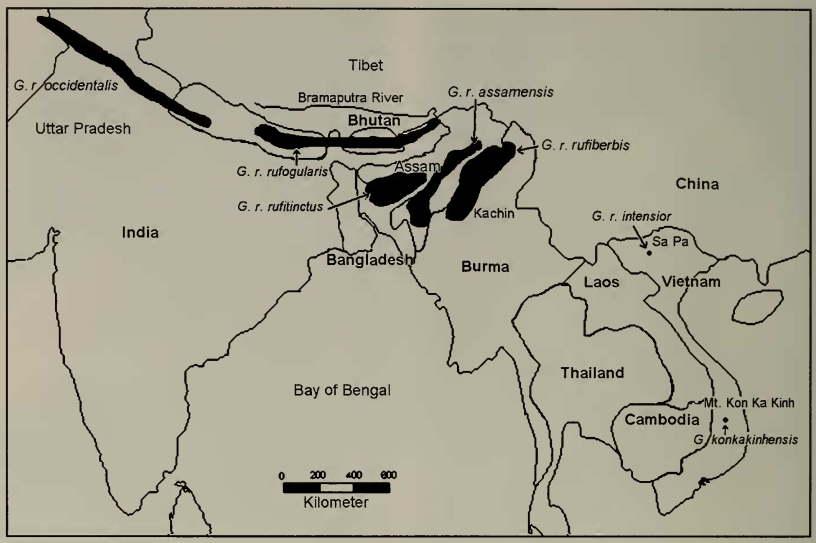

Figure 4. The approximate geographical ranges of *Garrulax rufogularis* and *G. konkakinhensis*

In the following description a quantitative judgment of colour has been made, wherever possible, using Smithe (1975) whose colour descriptions and numbers appear in parentheses following our own subjective determination.

The feathers of the forehead are grey (Medium Neutral Gray 84) with black (Jet Black 89) tips and central shaft streaks. The black tips and central shaft streaks become broader on the crown and nape. The grey (Medium Neutral Gray 84) supercilium merges with the sides of the crown, extending from above to behind the eye. The ear-coverts are chestnut (Kingfisher Rufous 240). A black (Jet Black 89) malar stripe extends in an unbroken line from the gape, bordering the chestnut ear-coverts and merges with the black feathers on the sides of the throat. The lores are pale buff (Pale Pinkish Buff 121D), with blackish feathering immediately in front of the eye. The chin and throat are off-white, faintly tinged buff (Pale Pinkish Buff 121D), grading to a slightly richer buff on the sides of the chin and throat. The feathers of the chin and throat irregularly show faint blackish centres, which are narrowly fringed black, which extend onto the sides of the throat and neck. The upper breast is pale grey (Glaucous 80) washed buff (Light Drab 119C) and is narrowly fringed black and with narrow black central shaft streaks. The belly and flanks are pale orange-buff (Clay Color 26) becoming rich buff (Antique Brown 37) on the vent. The mantle, and lesser, median and greater wing coverts are olive-buff (Dark Drab 119B) becoming a warmer brown (Raw Umber 123) on the back, rump and scapulars, and are fringed black, broadly so on the mantle, greater coverts and scapulars. The upperparts are thus boldly and irregularly barred. The alula is black but with a grey basal half to the outer web. The primary coverts are blackish-brown (Sepia 119). The outer webs of the outermost

seven primaries are fringed bluish-white, forming an indistinct pale wing panel. This bluish white panel grades to olive-brown (Ground Cinnamon 239) on the inner primaries and secondaries, including the tertials. The inner webs of the primaries and secondaries are light blackish-brown (Blackish Neutral Gray 82). The tips of the outer webs of the innermost three primaries and all the secondaries are black with a narrow white fringe. This pattern gradually becomes more extensive across the secondaries so that tertials are very broadly tipped black with pronounced white fringes. The upper tail coverts are rufous-brown (Antique Brown 37). There are 12 rectrices which are mid-brown (Raw Umber 23) and which grade to a less rufous and more olive brown towards their tips. All rectrices have very broad sub-terminal black bands and are broadly tipped white. On the outermost two pairs, the black extends almost halfway along their entire length, whereas on the innermost pair, the black extends for 20 mm. The underside of the tail is blackish-brown (Blackish Neutral Gray 82) and all feathers are broadly tipped white. Bare parts: bill - upper mandible dark horn with a pale horn lower mandible; legs flesh horn with yellow soles; iris brown.

Measurements of type (mm): maxilla (tip to skull) 24.5; tarsus 40; wing (max. chord) 99; tail 123.

Paratypes. Two additional specimens were collected on Mount Kon Ka Kinh and are currently held at BirdLife International in Hanoi (Fig. 3d). A female collected on 29 April 1999 at *c.* 1,650 m, No.1945.2.11; and a juvenile male collected on 23 April 1999 at *c.* 1,600 m, No.1945.2.12. Their measurements (mm) are, respectively: maxilla 23.5, 21.5 (tip to skull); tarsus 41, 39; wing (max. chord) 98, 95; tail 116, 112. Specimen No. 1945.2.11 had a dark brown iris; bill with a dark horn upper mandible and a pale horn lower mandible; legs flesh horn. Specimen No. 1945.2.12 had a bill with a dark horn upper mandible and a pale horn lower mandible; legs flesh horn. Iris colour was unrecorded. The condition of the gonads in these two specimens was not noted.

Paratype variation. The adult female appears very similar to the male holotype but shows slightly broader white tips to the tertials and buffish tips to the outer webs of the innermost primary and the secondaries. The tips to the underside of the rectrices are off-white. The fledged juvenile shows characteristically soft and under-developed plumage and a black crown with only a small amount of grey evident behind the eye. No other significant plumage differences are apparent with the holotype (Fig. 3d).

Ecology and behaviour. The only field observation relates to a flock of at least three birds from amongst which JCE collected a juvenile male on 23 April 1999 at *c.* 1,600 m. This flock was observed moving rapidly through bamboo undergrowth. On Mount Kon Ka Kinh, *G. konkakinhensis* occurs sympatrically with Red-tailed Laughingthrush *G. milnei* from *c.* 1,600 m to the summit. *Garrulax konkakinhensis* may occur at lower elevations but determination of this was difficult to verify because the species was not heard singing or indeed making any vocalizations during March and April. Pairs of *G. milnei* were recorded singing and holding territory during the same period. The lower altitude limit of *G. konkakinhensis* has not been determined; if it extends to *c.* 1,500 m it would overlap the range of Black-hooded Laughingthrush *G. milleti*, which

was recorded commonly up to *c.* 1,500 m. The closely related *Garrulax rufogularis* is noted to also be a skulker, more often heard than seen and doubtless overlooked. *Garrulax rufogularis* keeps in pairs or small family parties, haunting low bushes and feeding mostly on the ground. It takes to the wing with reluctance and flight is weak and ill-sustained (Ali & Ripley 1972).

Habitat. On Mount Kon Ka Kinh, *G. konkakinhensis* was found in the undergrowth of primary upper montane evergreen forest (as defined by Whitmore 1992). The holotype was collected from the narrow summit ridge where bamboos, including *Arundinaria baviensis* and *Schizostachyum* sp., were predominant in the undergrowth. Both the holotype and the type series were collected from upper montane evergreen forest, dominated by broadleaf tree species from the families Fagaceae, Lauraceae, Magnoliaceae, Hamamelidaceae, Theaceae, Ericaceae, Myrtaceae and Araliaceae. This forest was being logged for large, emergent *Fokienia hodginsii* and in many places the canopy was broken and there were many clearings. On Mount Kon Ka Kinh, from *c.*1,600 to the summit at 1,748 m, the forest canopy height was *c.* 10-15 m, with 20 m trees in flatter areas of the summit plateau. In the Indian subcontinent *Garrulax rufogularis* has been noted to occur from 600-1,900 m in dense thickets, scrub jungle, dense undergrowth in oak and rhododendron forest, forest edge and especially secondary growth near cultivation (Ali & Ripley 1972). In northern Vietnam *G. r. intensior* is known to occur from 1,500 m to 2,500 m (Delacour & Jabouille 1931).

Distribution. Garrulax konkakinhensis was discovered on Mount Kon Ka Kinh (Gia Lai province) in the Central Highlands of Vietnam and is currently known only from this site (Figs.1 and 2). It is likely to occur to the north in adjacent Kon Tum province and could conceivably occur in Laos, because forest habitat within the species' altitudinal range extends across the provincial and international borders. In this context, it is worth mentioning sightings of a laughingthrush, seen in the Phou Ahyon area of south-east Laos between 1,350-1,450 m in May 1996, which showed some similarities to *G. rufogularis* (Duckworth *et al.* 1999). Whilst noting some plumage features which are also shown by *G. konkakinhensis*, the observer noted red remiges and a black wing bar which are absent in this new species. On the basis of these sightings, the species in question was provisionally identified as Spotted Laughingthrush *G. ocellatus* (R. Timmins *in litt.* 1996). In the absence of any voucher specimen, we believe this sight record is best judged as *Garrulax* sp.

Etymology. We name this species after the type locality, Mount Kon Ka Kinh (Figs. 1 and 2). This little-studied area was recently gazetted as a nature reserve and this is the first bird species to be named for the site.

Taxonomic considerations

Within the genus *Garrulax*, there are several species groups that are here defined as monophyletic subsets of species (Amadon & Short 1992). An example of a species group within this genus are *G. erythrocephalus*, *G. ngoclinhensis* and *G. yersini* (Eames *et al.* 1999). *Garrulax konkakinhensis* comprises a species group together

TABLE 1

Plumage features of *Garrulax rufogularis* and *G. konkakinhensis*

Taxon	*Chin and throat*	*Crown*	*Mantle*	*Breast*	*Ear-coverts*	*Tail tip*	*Vent*	*Wing panel*
G. rufogularis rufogularis	Orange brown chin (sometimes absent); throat grey-white	Black, occasionally olive-brown tipped black	Olive-brown scaled black	Grey or grey and olive, scaled black	Black, black with pale grey centres sometimes with olive-brown admixed	Orange-brown (Tan)	Cinnamon	Present
G. r. occidentalis	Orange-brown chin and throat; sometimes throat off-white	Black, occasionally pale olive-brown tipped black	Pale olive-brown scaled black	Grey or grey and olive, scaled black	Chestnut-orange	Orange-brown (Tan)	Orange-brown	Present
G. r. assamensis	Orange-brown	Black	Olive-brown, scaled black	Grey-buff narrowly scaled black	Olive-brown tipped black	Orange-brown	Dark cinnamon	Present
G. r. rufitinctus	Orange-brown	Olive-brown broadly scaled black	Olive-brown scaled black	Grey-buff narrowly scaled black	Dull chestnut-orange	Orange-brown (Tan)	Orange-brown	Present
G. r. rufiberbis	Grey-white	Black	Olive-brown, scaled black	Grey, scaled black	Olive-brown tipped black	Orange-brown (Tan)	Dark cinnamon	Present
G. r. intensior	Orange-brown chin; white throat	Brown, brown tipped black or black	Dark brown scaled black	Dark grey heavily scaled black	Black or black admixed with olive-brown	Orange-brown (Tan)	Very dark Cinnamon	Present
G. konkakinhensis	Off white, slightly buff at edge, fine black shaft streaks	Grey fore-crown tipped black; hind-crown black	Olive-brown scaled black	Buff washed olive-grey, narrowly fringed black with black central shaft streaks	Chestnut	White	Dark buff	Absent

with three other Sino-Himalayan species, *G. rufogularis*, *G. cineraceus* and *G. lunulatus*. Here we present the case for affording specific rank to *G. konkakinhensis* based on its morphology in comparison with *G. rufogularis*, with which it shows a strong similarity. Based on plumage, *G. cineraceus* and *G. lunulatus* show far fewer similarities and, by analogy, would be placed further away in the phylogeny.

Deignan (1964) recognized seven subspecies within *Garrulax rufogularis*, distributed as follows: *G. r. occidentalis* extends through the Himalayas from Pakistan eastward to north-western Uttar Pradesh in India; *G. r. grosvenori* is known from Rekcha, Dailekh District in west Nepal; *G. r. rufogularis* occurs from central Nepal eastward, through Bhutan into the Indian state of Assam, north of the River Brahmaputra; *G. r. assamensis* is known from Margherita in north-eastern Assam; *G. r. rufitinctus* is known from the hill tracts of Assam south of the Brahmaputra River; *G. r. rufiberbis* is known from Kachin State in northern Burma, and *G. r. intensior* is known only from its type locality at Sa Pa in north-western Vietnam (Fig. 4). Subsequently, Ripley placed *G. r. grosvenori* in synonomy with *G. r. occidentalis* and therefore this form has not been considered further in this review (Ripley 1982). The distributions of these taxa are imperfectly known and the species has been predicted to occur in the Chumbi valley (Yadong) and in the Medog area of south and south-east Xizang province, China (Tibet) (MacKinnon & Phillipps 2000). On 11 March 1999, the species was observed at Ruili, in south-west Yunnan province (China) (Dymond & Thompson 2000).

Throughout its range, *G. rufogularis* is very variable, with variation in plumage characters in some cases clinal and in others abrupt and mosaic. All seven subspecies of *G. rufogularis* show rufous tips to the rectrices, a black wing panel across the remiges and black on the forecrown to a variable degree. Furthermore, all subspecies show a variable extent of orange on the chin and throat. For example, the holotype of *G. r. rufiberbis* shows only a small extent of orange on the chin, whereas in *G. r. occidentalis*, *G. r. rufitinctus* and *G. r. assamensis* the orange is more extensive. Other characteristics, such as the colour of the upperparts, which vary from light

TABLE 2

Summary of plumage features of *Garrulax konkakinhensis*, *G. rufogularis*, *G. cineraceus* and *G. lunulatus*

Taxon	*Wing panel*	*Orange-brown tips to rectices*	*Grey forehead and supercilium*	*Buff vent and belly*
Garrulax konkakinhensis	-	-	+	+
G. rufogularis rufogularis	+	+	-	-
G. r. occidentalis	+	+	-	-
G. r. assamensis	+	+	-	-
G. r. rufitinctus	+	+	-	-
G. r. rufiberbis	+	+	-	-
G. r. intensior	+	+	-	-
G. cineraceus	-	-	-	+
G. lunulatus	-	-	-	+

TABLE 3

Comparison of biometrics amongst *Garrulax rufogularis* and *G. konkakinhensis* based on specimens in The Natural History Museum, Tring. In each cell, the biometric range is given, followed by the mean, standard deviation and finally the sample size.

All measurements are in mm.

Taxon	*Maxilla (tip to skull)*	*Tarsus*	*Wing (max. chord)*	*Tail*	*Sex*
G.rufogularis rufogularis	24,25,24,24,24.5, 23.,24.5,22,25,22 (23.9) {1.081} [10]	33.5,36.5,36,34.5,38, 36,37,35,36.5,36.5 (36.0) {1.301}[10]	95,95,92,98,94,93, 96,91,95,89 (93.8) {2.616} [10]	106,110.5,108,111,104, 105.5,113,100.5,106,102.5 (106.7) {3.945}[10]	2m, 8?
G. r. intensior	26,25,24.5 (25.2) {0.764}[3]	38.5,35,37 (36.8) {1.756}[3]	97,98,95 (96.7) {1.528} [3]	110,113,110 (111.0){1.732} [3]	2m,1f
G. r. rufiberbis	24.5 (24.5) [1]	34 (34.0) [1]	93 (93.0) [1]	101 (101.0) [1]	1m
G. r. occidentalis	23,22,22,22,23.5, 24,23,24,24,22.5 (23.0) {0.85}[10]	33.5,36,33,34,35.5, 34,34,36,34,34.5 (34.5) {1.039}[10]	93,96,99,92,91,91, 90, 98,94,93 (93.7) {3.057} [10]	107.5,113,106,111,117, 106,115,115,110,109 (111.0) {3.933}[10]	2f,1m,7?
G. r. rufitinctus	23.5, broken,18.5 (21.0) {3.536}[2]	36,37,34 (35.7) {1.528}[3]	95,92,86 (91.0) {4.583} [3]	116,113,98 (109.0) {9.644}[3]	1f,2?
G. konkakinhensis	24.5,23.5,21.5 (23.2){1.528} [3]	40,41,39 (40.0) {1.000}[3]	99,98,95 (97.3) {2.082}[3]	123,116,112 (117.0) {5.568}[3]	2m,1f

olive-brown to dark brown, and the colour of the vent, which varies from cinnamon to a dark cinnamon, show clinal variation. Upperpart and vent colouration become progressively darker and browner as one moves eastwards and in the easternmost *G. r. intensior* black and dark browns show their greatest expression. Other features, such as the chestnut ear-coverts, show a mosaic expression since only two of the subspecies of *G. rufogularis*, which do not all have allopatric ranges (*G. r. occidentalis* and *G. r. rufitinctus*), show this feature. Thus, the westernmost form, *G. r. occidentalis*, bears the closest resemblance to *G. konkakinhensis* in the extent of orange on the ear-coverts and in general plumage colouration, whereas *G. r. intensior*, which has the closest geographic proximity, bears the least resemblance to *G. konkakinhensis*. Table 1 details the general morphology of all seven forms of *G. rufogularis*, and *G. konkakinhensis*, based on an examination of four holotype specimens and additional skins of *G. rufogularis* taxa in the American Museum of Natural History and at The Natural History Museum. Although bearing strong resemblance to the western races of *G. rufogularis*, *G. konkakinhensis* is morphologically sufficiently distinct to warrant specific treatment because it shows four unique plumage features that are not shown by any subspecies of *G. rufogularis*. Table 2 summarises these features, and also includes the related *G. cineraceus* and *G. lunulatus*. The possession of white tips to the rectrices, the absence of a black band across the remiges, and a buff vent and belly are plumage features that *G. konkakinhensis* shares with *G. cineraceus* and *G. lunulatus*, indicating a shared ancestry with these taxa. The distinctive morphology of *G. konkakinhensis* and *G. rufogularis* indicates that the level of genetic variation between them is greater than that among the seven described subspecies of *G.*

rufogularis. In comparison with the *G. rufogularis* taxa in Table 3, there is overlap in bill, tail and wing lengths but tarsus, wing and tail lengths are, on average, longer. The tarsus measurements for *G. konkakinhensis* lie beyond the range of *G. rufogularis*. Although the sample sizes are small, analysis comparing *G. konkakinhensis* with *G. rufogularis* (all five subspecies lumped together) using one-way analysis of variance, shows there is no significant difference in maxilla length ($p=0.44$) or wing length ($p=0.06$), but tarsus length ($p<<0.01$) and tail length ($p=0.01$) are significantly different.

Under the phylogenetic species concept, a species is defined as an irreducible (basal) cluster of organisms, diagnosably distinct from other such clusters and within which there is a parental pattern of ancestry and descent (Cracraft 1989). The possession of only one diagnostic character would have been sufficient for the new taxon to be considered a species under the phylogenetic species concept and, with four, *G. konkakinhensis* easily meets that definition. We prefer, however, to approach the question of appropriate taxonomic rank for this taxon using a refined version of the biological species concept. Under the biological species concept, species are systems of populations: the gene exchange between these systems is limited or prevented by a reproductive isolating mechanism or perhaps by a combination of several such mechanisms (Dobzhansky 1937). Applying the biological species concept, *G. rufogularis* is considered to comprise a single species by Deignan (1964), Sibley & Monroe (1990) and Inskipp *et al.* (1996). For birds, the biological species definition has recently been broadened to the comprehensive biological species concept (CBSC). Under the CBSC, "a bird species is a system of populations representing an essentially monophyletic, genetically cohesive, and genealogically concordant lineage of individuals that share a common fertilization system through time and space, represent an independent evolutionary trajectory, and demonstrate essential but not necessarily complete reproductive isolation from other such systems" (Johnson *et al.* 1999).

The taxonomic ranking of allopatric populations of taxa has been a long recognized problem for the obvious reason that no test of sympatry is possible. This is indeed the case with *G. konkakinhensis* and *G. rufogularis intensior* which are only currently known from their respective type localities that are *c.* 1,000 km apart (Fig.4). Given that both localities are situated amongst more extensive forested montane areas, it seems unlikely that these taxa are confined to their type localities and that their respective ranges extend over wider areas. However, we presently lack sufficient data on the extent of their geographic ranges to demonstrate whether they may be sympatric or parapatric. Their taxonomic status must, therefore, be considered as if they were allopatric. Within the genus *Garrulax*, species have evolved unique combinations of wing and tail markings that seem likely to act as signaling mechanisms to facilitate recognition by members of the same species. The species in question, *G. konkakinhensis* and *G. rufogularis*, have each evolved a distinctive and unique tail and wing pattern. These features demonstrate (but do not prove) essential reproductive isolation, whether their ranges prove subsequently to be

allopatric, parapatric or sympatric. Applying the CBSC, this is a key defining trait of specific rank.

In conclusion, our case for the validity of *G. konkakinhensis* as a good biological species rests on its distinctive morphology. Its reproductive isolation from *G. rufogularis* can only be inferred on the basis of our current knowledge. However, given that *G. konkakinhensis* exhibits a range of plumage features, including those which may assist in species recognition, to have described *G. konkakinhensis* as a mere subspecies of *G. rufogularis*, would have added another and significant level of variability to a highly variable taxon, which itself requires further taxonomic revision.

Conservation

Kon Ka Kinh Nature Reserve was included on a list of proposed protected areas decreed by the government of Vietnam in 1986. This decree indicated the intent of the government to establish protected areas at a number of sites without defining exact areas or boundaries and without specifying a timescale. In 1999, BirdLife International and FIPI began researching a project investment document for the establishment of a nature reserve at this site which was subsequently published in English (Le Trong Trai *et al.* 2000). The forests within the proposed Kon Ka Kinh Nature Reserve comprise a mosaic of primary and seral forest formations, and, on the evidence of shifting cultivation, indicate a long history of human utilization (Fig. 2). During fieldwork in 1999, there was much evidence of recent and continuing commercial logging of *Fokienia hodginsii*. It is difficult to imagine that this was occurring without the compliance of the provincial authorities. Following consultation with Gia Lai Provincial People's Committee, their endorsement was gained for the establishment of a 41,710 ha nature reserve (Anon. 1999). This proposal has now been endorsed by central government. The boundary includes the three sites on Mount Kon Ka Kinh where the holotype and paratypes of *Garrulax konkakinhensis* were collected. Since the proposed boundary of the protected area encompasses extensive areas at higher elevation, it is felt that, if successfully established, the future of this population of *G. konkakinhensis* will be secured. The current absence of data on population size, trend and distribution, indicate that *Garrulax konkakinhensis* must be categorised as Data Deficient (IUCN 1994). The species is currently known only from a narrow altitudinal range at a single site, so efforts should be directed to determining its conservation status. Its occurrence in logged forest indicates some tolerance for disturbed habitat.

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First records, noteworthy observations and new distributional data for birds in Paraguay

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The Río Paraguay divides Paraguay into two distinct regions. The relatively flat Chaco in the west is characterised by seasonally flooded palm savannas in the south-east, semi-arid thorn scrub forest in the west, and subhumid forests in the north-east. The Oriente in the east combines several distinct ecosystems and its avifauna is correspondingly diverse (Hayes 1995): cerrado in the north, natural grasslands and marshes in the south and humid Interior Atlantic Forest in the east.

From July to December 1997 we carried out ornithological fieldwork in a variety of habitats at three sites in the Chaco and three in the Oriente. Our work focused on two of the seven geographical regions identified by Hayes (1995): Matogrosense in the Chaco, and Central Paraguay in the Oriente. Additional short spells of fieldwork were conducted at sites in the Alto Chaco and Alto Paraná regions. Noteworthy records from additional fieldwork conducted by AMN and RPC are also included, as are a few observations from 1994-95, omitted from previous publications (e.g. Lowen *et al.* 1997a,b; Madroño N. & Esquivel 1997). From these surveys we present noteworthy observations on 30 species.